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THE "LETTER" TO A.D. 6939

By SID ISENBERG

FIVE thousand years hence historians will receive an 800 pound metal letter, a "Time Capsule" containing information about us and our times. At the moment of the Autumnal Equinox, on September 23, 1938, the Westinghouse Time Capsule, carrying a compressed storehouse of information about today's civilization, began its long journey into the future at the New York World's Fair grounds.

Of course, nobody can say with absolute certainty that anything will last 5,000 years, because it is impossible to foresee all the destructive forces that may develop. However, some of the foremost metallurgists and engineers of our time believe they have solved this problem by utilizing science's most recent discoveries in the design of the Capsule.

Since the experience of today's engineers with metals and alloys is short, relative to such a time as fifty centuries, years of painstaking research were necessary before a suitable material for the shell of the seven and a half foot torpedo-shaped crypt was discovered. Literally the alloy developed symbolizes the key to the "Philosopher's Stone" for which the ancient alchemists had searched in vain since the days of the Pharaohs, striving to transmute one metal into another. Making use of the theories of space lattices of the crystals of invisible atoms that make up the 92 elements of the earth, a heat-treatable alloy composed of copper, chromium, and silver was perfected.

The metal, called Cupaloy, may be made as hard as steel, yet it has a resistance to corrosion equal to pure copper. In electrolytic reactions with the corrosive salts in the soil, the Cupaloy becomes the anode and therefore will receive deposits, rather than suffer corrosion, should such action take place. Confidence in Cupaloy's ability to withstand the attacks of time is further strengthened by the fact that many copper alloy implements have come down to us from antiquity.

The secret of the remarkable properties of this alloy lies in the grouping of the atoms. The investigators forced the chromium atoms to group themselves to form billions of crystallites distributed quite uniformly through the mass of mixed metals. The peculiar arrangement of the chromium atoms made the mass hard, and the relatively few silver atoms acted as stabilizers of the alloy after it had been temper-hardened, increasing its resistance to the softening effects of long exposure to high temperatures.

The casting and precision machining of the Capsule represents the work of expert craftsmen and engineers. The shell consists of six cast segments, each approximately one foot two inches in length and eight inches in diameter. All segments except the last are screwed

together on a phos-copper gasket and brazed, the joints being peened out and burnished, so that the outside of the Capsule presents a solid, unbroken surface. The last section, connected after the contents were put in place, is shrunk-fit on tapering threads, a process which produces a perfectly water-tight joint. Because it was feared the heat might damage the contents of the Capsule this joint was not brazed.

The inner crypt of the Capsule is a space six inches in diameter and somewhat more than six feet long. Within the corrosive-proof, water-tight shell is a pyrex glass envelope embedded in waterproof mastic. This inner shell, in which the objects to be preserved were enclosed, was exhausted of air and filled with nitrogen, which will act as a preservative.

The materials placed inside the crypt were specially treated and selected, so far as possible, to give them resistance to time. Material that would ordinarily be published in book form was photographed on acetate microfilm, a method which not only gives permanence but also makes possible concentration of much information in small space. About 3,200 ordinary book pages can be condensed into a single 32-millimeter roll of micro-film five inches in diameter. Where it was necessary to enclose papers, only the finest 100 per cent rag was used. Metal objects were coated with a thin layer of wax, to make them less subject to attack by the slight amount of moisture in the gas of the capsule. No liquids, acids, or corrosive substances were included in the crypt's contents, for it was feared they might damage other objects.

With the limitations in the size and nature of articles to be placed inside the Capsule, it was quite a problem to deposit a record which will show a cross-section truly representative of our time. The country's foremost archaeologists, historians, scientists, scholars and the public in general were consulted before the Capsule's contents were selected.

In general, the Capsule contains 1,100 feet of micro-film "essay" on present-day civilization with a small microscope suitable for reading the film, a fifteen-minute newsreel, and more than 100 other solid objects. Into that 1,100-foot cyclopedia are squeezed more than ten million words and a thousand illustrations, including books on industry, invention, and science, a mail order catalogue, two dictionaries, a score of magazines, great chunks from the Encyclopedia Britannica, Walt Disney's "Donald Duck" cartoons, art, music, and hundreds of other carefully selected and arranged fragments of pictorial and printed knowledge. If they want facts about us these "futurians" may scan the World Almanac; if they're after clues on what made 1938 women "mod-

ern", there's a volume called "Designing Women", also an issue of "Women's Wear Daily".

So that the people of fifty centuries hence may understand what they read, there is included in the Micro-File a section on aids to translation which besides a Standard Dictionary and a Dictionary of Slang, reproduces the Lord's Prayer in 300 tongues.

The complete classification of the information covered in the microfilm is as follows: Aids to Translation; Where We Live and Work; Our Arts and Entertainment; How Information is Disseminated Among Us; Our Religions and Philosophies; Our Education and Educational Systems; Our Sciences and Techniques; Our Earth, Its Features and Peoples; Our Medicine, Public Health, Dentistry and Pharmacy; Our Industries; New York World's Fair 1939; The Objects in the Capsule; The Men Who Made The Capsule; How We Appear, Talk, and Act; Scenes of Our Day.

The solid objects finally chosen for the 5,000 year journey were carefully considered by archaeologists for the story they tell of our contemporary life. The items consigned to the people of A. D. 6939 were selected out of thousands of proposals and suggestions.

Nestled together in the crypt are such objects as a woman's hat, a make-up kit, nail file, tooth brush and powder, safety pin, can opener, alarm clock, Holy Bible, twin decks of cards and stack of poker chips (the rules for playing are in the microfilm), pipe, camera, cigarettes, tobacco, children's blocks, doll, toy automobile, fountain pen, electric lamp, athletic equipment—and many other items. Common materials included samples of twelve staplecrop seeds, swatches of various textiles such as wool, silk, cotton and rayon; plastics, coal, asbestos, cement, metals, alloys and rubber.

The complete classification of the objects in the Capsule is as follows: Objects contributing to convenience, comfort, health, safety; For the pleasure, use, and education of children; Pertaining to the grooming and vanity of women; Pertaining to the grooming and personal habits of men; Pertaining to games; Fabrics; Metals and Alloys; Non-Metallic Materials; Miscellaneous objects, including currency, seeds, books, etc.

If the sports fans of the future don't understand Brooklyn base-running, football's five man defense, and the average American's devotion to golf, they may be in for some archaeological puzzlement. For there are photographs of a Dodger game, a five man Princeton line trying to stop Yale, and an umbrella covered crowd of wet humanity following a Walker Cup golf match. Also, a fifteen-minute composite newsreel prepared especially for "futurians" shows, among other things: Jessie Owens winning the 100-meter Olympic finals; The National Leaguers pinning the American Leaguers' ears back at Crosley Field, Cincinnati; The Yale taking the Harvards 14 to 13. And included in the sealed glass lining of the Time Capsule are a few of the instruments of modern sports warfare; a baseball, two

golf balls and a pair of tees being sent to the folks of that distant day.

Three noted men of science and literature, Dr. Albert Einstein, Dr. Robert A. Milliken, and Dr. Thomas Mann, have written letters to the future, figuratively marked "do not open until A.D. 6939". These messages, written on permanent paper with non-fading ink, together with a letter from Grover A. Whalen, President of the World's Fair, were enclosed in the Time Capsule. Each summed up his impression of the present age in about 150 words. All four took a rather gloomy view of the present.

Thus, by the use of microfilm, a newsreel, objects and messages, a bountiful source of information for future archaeologists has been sealed in a seven and a half foot envelope. If the people of the future review the contents of the crypt they will know more than any one mortal of the Twentieth Century knows.

Of course, a major problem in this project was that of leaving word to guide future historians when the time has come to dig up the Time Capsule. This job was effectively done by making a Book of Record, which contains complete information for the guidance of the scientists of A. D. 6939. It contains a message to posterity, asking that it be preserved and translated into new languages as they arise; a description of the contents of the Capsule, and detailed instructions for finding, raising and opening the Capsule when the time has come.

An edition of 1,650 copies of the Book of Record is permanently bound with blue buckram, stamped in genuine gold. An additional run of about 2,000 copies were bound in paper covers, stamped in aluminum. Copies are being sent to leading libraries, museums and other repositories throughout the world, in the expectation that a few, at least, will survive 5,000 years.

To produce a book capable of surviving such a long period of time, the U. S. Bureau of Standards was consulted as to paper, ink and other matter. The paper selected was 100-pound Permanent Ivory Wove.

The instructions for finding the Capsule include astronomical data furnished by the U. S. Naval Observatory; the exact latitude and longitude determined closely enough by the U. S. Coast and Geodetic Survey to locate a spot the size of a quarter-dollar on the earth's surface; instructions for locating the Capsule by electro-magnetic prospecting; and a "Key to English" which will enable the people of the future not only to read and translate English into their own tongue, but even to pronounce it, 1938 style.

In all probability, methods more sensitive than those employed today will be used in the future to seek metallic bodies beneath the earth. However this may become a lost art, and the electro-magnetic prospecting instructions contained in the Record Book may be of great value. This technique is used at present to discover buried pipe lines, ore bodies and other valuable deposits.

Thus, the experts left no stone unturned to assure

the "delivery" of the "letter" to the people of the future. For the treasures contained in the Capsule may be the only evidence left on earth of our kind of living. Five thousand years of time may easily destroy everything the people of this age have done, and our present civilization may be but a dim shadow.

The value of leaving such a record of our civilization is ably expressed in the words of Dr. Clark Wissler, archaeologist and Dean of the Scientific Staff, American Museum of Natural History, New York. In an address by Dr. Wissler, on the Occasion of the Depositing of the Time Capsule, he said: "So long as

man is man, it seems certain that the spirit of the new civilization, to which we are about to dedicate this deposit of record, will be keen to study the evidences of what we do here, and from such study of our achievements and failures derive emotional satisfaction as well as wisdom".

"The present civilization has an obligation to itself to make its contribution to the future as eternal as possible. No longer should we trust to mere accident to perpetuate the record but with forethought and sound judgment bury in the earth imperishable records of our time".
